

measuring the thickness of the oxide film by irradiating the oxide film with light, in accordance with the exposure period.

2. (Amended) The method of claim 1, further comprising correcting the thickness measurement of the oxide film, which is measured when the exposure period is elapsed, based on a relationship between the exposure period and the thickness of the oxide film to obtain the real thickness of the oxide film.

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3. (Amended) The method of claim 2, wherein the method includes correcting the measurement according to the following formula:

$$y = a \cdot \ln(t) + b$$

in which t is the exposure period from the formation of the oxide film to the measurement of the thickness, y is the thickness of the oxide film measured when the exposure period is elapsed, a is a constant determined based on atmosphere around the oxide film, and b is the real thickness of the oxide film.

4. (Amended) The method of claim 1, wherein the method includes measuring the thickness of the oxide film within the exposure period so that a variation T in change of thickness, which is produced in accordance with the exposure period, satisfies a formula of:

$$\sqrt{S^2 + T^2} \leq U$$

in which S is a variation in thickness that is produced when the oxide film is formed, and U is an allowable latitude in the thickness of the oxide film.

5. (Amended) A method for measuring a thickness of an oxide film, comprising:

forming an oxide film on a substrate;

washing a surface of the oxide film;

measuring an exposure period, which is defined from a time at which the surface of the oxide film is washed to a time at which the thickness of the oxide film is measured; and

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cond measuring the thickness of the oxide film by irradiating the oxide film with light in accordance with the exposure period.

9. (Amended) The method of claim 5, further comprising correcting the thickness measurement of the oxide film, which is measured when the exposure period is elapsed, based on 917 a relationship between the exposure period and the thickness of the oxide film to obtain the real thickness of the oxide film.

10. (Amended) The method of claim 9, wherein the method includes correcting the measurement according to the following formula:

$$y = a \cdot \ln(t) + b$$

in which t is the exposure period from the washing of the oxide film to the measurement of the thickness, y is the thickness of the oxide film measured when the exposure period is elapsed, a is a constant determined based on the atmosphere around the oxide film, and b is the real thickness of the oxide film.

11. (Amended) The method of claim 5, wherein the method includes measuring the thickness of the oxide film within the exposure period from the washing of the surface of the oxide film so that a variation T in change of thickness, which is produced in accordance with the exposure period, satisfies a formula of:

$$\sqrt{S^2 + T^2} \leq U$$

in which S is a variation in thickness that is produced when the oxide film is formed, and U is an allowable ~~latitude~~ ^{latitude} in the thickness of the oxide film.

12. (Amended) A method for manufacturing a semiconductor device, comprising:

forming on oxide film;

measuring an exposure period defined from a time at which the oxide film is formed to a time at which a thickness of the oxide film is measured; and

determining the thickness of the oxide film by irradiating the oxide film with light in accordance with the exposure period;

determining whether the thickness of the oxide film falls in a desirable range; and

performing a succeeding step for manufacturing the semiconductor device when the thickness of the oxide film falls in the desirable range.

13. (Amended) The method of claim 12, further comprising correcting the thickness measurement of the oxide film, which is measured when the exposure period is elapsed, based on a relationship between the exposure period and the thickness of the oxide film to obtain the real thickness of the oxide film, wherein:

the succeeding step is performed when the corrected thickness falls in the desirable range.

14. (Amended) The method of claim 13, wherein the method includes correcting the measurement according to the following formula:

$$y = a \cdot \ln(t) + b$$

in which t is the exposure period, y is the thickness of the oxide film measured when the exposure period is elapsed, a is a constant determined based on atmosphere around the oxide film, and b is the real thickness of the oxide film.

15. (Amended) The method of claim 12, wherein the method includes measuring the thickness of the oxide film within the exposure period so that a variation T in change of thickness, which is produced in accordance with the exposure period, satisfies a formula of:

a, b
c, d

$$\sqrt{S^2 + T^2} \leq U$$

in which S is a variation in thickness that is produced when the oxide film is formed, and U is an allowable latitude in the thickness of the oxide film.

16. (Amended) A method for manufacturing a semiconductor device, comprising:
forming an oxide film;
washing a surface of the oxide film;
measuring an exposure period defined from a time at which the surface of the oxide film is washed to a time at which the thickness of the oxide film is measured; and
determining the thickness of the oxide film by irradiating the oxide film with light in accordance with the exposure period;
determining whether the thickness of the oxide film falls in a desirable range; and
performing a succeeding step for manufacturing the semiconductor device when the thickness of the oxide film falls in the desirable range.

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20. (Amended) The method of claim 19, further comprising correcting the thickness measurement of the oxide film, which is measured when the exposure period is elapsed, based on

a relationship between the exposure period and the thickness of the oxide film to obtain the real thickness of the oxide film.

21. (Amended) The method of claim 20, wherein the method includes correcting the measurement according to the following formula:

$$y = a \cdot \ln(t) + b$$

in which t is the exposure period, y is the thickness of the oxide film measured when the exposure period is elapsed, a is a constant determined based on atmosphere around the oxide film, and b is the real thickness of the oxide film.

22. (Amended) The method of claim 20, wherein the method includes measuring the thickness of the oxide film within the exposure period so that a variation T in change of thickness, which is produced in accordance with the exposure period, satisfies a formula of:

$$\sqrt{S^2 + T^2} \leq U$$

in which S is a variation in thickness that is produced when the oxide film is formed, and U is an allowable latitude in the thickness of the oxide film.